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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,998	10/02/2003	Salih Burak Gokturk	CANE.P0044	8923

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EXAMINER

LEE, PATRICK J

ART UNIT PAPER NUMBER

2878

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/678,998

Applicant(s)

GOKTURK ET AL.

Examiner

Patrick J. Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment filed December 22, 2005.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10 & 13-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claims 1 & 13-14, the phrase "wherein occupancy within said space is determinable using a priori positional relationship between said optical energy source and said sensor without requiring a prior positional knowledge of said object" appears to be a critical limitation of applicant's device as applicant uses this to distinguish from the prior art of US 5,969,822 to Fright. However, it is unclear where in the applicant's specification is this aspect disclosed. As a result, independent claims 1 & 13-14 and dependent claims 2-10 & 15-20 are rejected.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2878

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 5-6, & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,541,722 to Jenks.

With respect to claim 1, Jenks discloses a contour line scanner that is capable of determining the widthwise position and shape of faces of boards comprising: lasers (42) for providing an optical energy source to generate at least one fan light beam (44) that are used for defining a reference plane in the space; X-Y axis TV camera (56) for disposing a sensor at a known vertical position relative to the reference plane defined by laser beams (44) and having a field of view encompassing at least an intersection of object (12); microcomputer (64) for recognizing output from camera (56) any object intersection; microcomputer (64) for determining the occupancy of the space by calculating a shape from the contour lines (which would inherently include the size of the intersection) and a widthwise position as a relative location of the intersection. Jenks also discloses that the occupancy is determined with the lasers (42) located horizontally from board (12), while camera (56) is located above the plane corresponding to beams (44) produced by lasers (42). It does not matter to the invention of Jenks where the board (12) is located within the reference plane.

With respect to claim 2, Jenks discloses lasers (42) for producing optical energy in the visible range.

With respect to claim 5, Jenks discloses the use of laser (42).

With respect to claim 6, Jenks discloses the use of laser (42) to generate beam (44) that produces the reference plane.

With respect to claim 13, Jenks discloses a contour line scanner that is capable of determining the widthwise position and shape of faces of boards comprising: lasers (42) as an optical energy source to generate at least one fan light beam (44) that are used for defining a reference plane in the space; X-Y axis TV camera (56) as camera in a known vertical position relative to the reference plane defined by laser beams (44) and having a field of view encompassing at least an intersection of object (12); microcomputer (64) as an image processing system for recognizing output from camera (56) any object intersection; microcomputer (64) for determining the occupancy of the space by calculating a shape from the contour lines (which would inherently include the size of the intersection) and a widthwise position as a relative location of the intersection. Jenks also discloses that the occupancy is determined with the lasers (42) located horizontally from board (12), while camera (56) is located above the plane corresponding to beams (44) produced by lasers (42). It does not matter to the invention of Jenks where the board (12) is located within the reference plane.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 3-4 & 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,541,722 to Jenks in view of US 5,102,223 to Uesugi et al.

Jenks discloses the device as described in the discussion of claims 1-2, 5-6, & 13.

With respect to claim 3, Jenks does not explicitly disclose the use of a rotating light source. Uesugi et al disclose such in a device for determining the three-dimensional curved surface shape, through the use of rotating mirror (4a) and light source (3). Such would have been obvious to one of ordinary skill in the art in order to expand the range over which a fan light beam is created.

With respect to claim 4, the modified Jenks would disclose a scanning light beam.

With respect to claim 7, the modified Jenks does not disclose the reference plane as such, but such would have been obvious to one of ordinary skill in the art as mere intended use as such would allow detection of objects within that space.

With respect to claim 8, the modified Jenks does not explicitly disclose the use of a digital camera, but such would have been obvious to one of ordinary skill in the art because such would allow for ease of processing of images detected.

With respect to claim 9, the vertical distance is not explicitly disclosed to be determined using a size of a smallest object, but such would have been obvious to one of ordinary skill in the art in order to allow for the device to appropriately and accurately detect whatever is within the reference plane.

With respect to claim 10, the modified Jenks does not explicitly disclose the acquiring of a reference training image, but such would have been obvious to one of ordinary skill in the art in order to allow for minimization of any errors in the detection and determination of the contour.

9. Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,541,722 to Jenks

With respect to claim 14, Jenks discloses a contour line scanner that is capable of determining the widthwise position and shape of faces of boards comprising: lasers (42) as a means for defining a reference plane to generate at least one fan light beam (44) that are used for defining a reference plane in the space; X-Y axis TV camera (56) as a sensor to acquire an image of the reference plane defined by laser beams (44) and having a field of view encompassing at least an intersection of object (12); microcomputer (64) as a means for deter for recognizing output from camera (56) any object intersection; microcomputer (64) for determining the occupancy of the space by calculating a shape from the contour lines (which would inherently include the size of

the intersection) and a widthwise position as a relative location of the intersection. Jenks also discloses that the occupancy is determined with the lasers (42) located horizontally from board (12), while camera (56) is located above the plane corresponding to beams (44) produced by lasers (42). It does not matter to the invention of Jenks where the board (12) is located within the reference plane. While Jenks does not disclose the acquisition of multiple images, such would have been obvious to one of ordinary skill in the art in order to allow for minimization of any errors in the detection and determination of the contour.

With respect to claim 15, the modified Jenks discloses the laser (42) for defining a beam (44).

With respect to claim 16, the modified Jenks does not explicitly disclose the use of a digital camera, but such would have been obvious to one of ordinary skill in the art because such would allow for ease of processing of images detected.

With respect to claims 17-18 & 20, the modified Jenks does not explicitly disclose determining a fullness factor or the emptiness, but such would have been obvious to one of ordinary skill in the art in order to better ascertain the contours of the objects.

With respect to claim 19, the modified Jenks does not disclose the system in an environment of a movable robot or a motor vehicle, but such would have been obvious to one of ordinary skill in the art as being intended use to allow for device taught by Jenks to be disposed in different environments.

10. Claims 11-12 rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,541,722 to Jenks in view of US 5,381,235 to Inoue et al.

With respect to claims 11-12, Jenks discloses a contour line scanner that is capable of determining the widthwise position and shape of faces of boards comprising: lasers (42) for providing an optical energy source to generate at least one fan light beam (44) that are used for defining a reference plane in the space; X-Y axis TV camera (56) for disposing a sensor at a known vertical position relative to the reference plane defined by laser beams (44) and having a field of view encompassing at least an intersection of object (12); microcomputer (64) for recognizing output from camera (56) any object intersection; microcomputer (64) for determining the occupancy of the space by calculating a shape from the contour lines (which would inherently include the size of the intersection) and a widthwise position as a relative location of the intersection. Jenks also discloses that the occupancy is determined with the lasers (42) located horizontally from board (12), while camera (56) is located above the plane corresponding to beams (44) produced by lasers (42). It does not matter to the invention of Jenks where the board (12) is located within the reference plane. However, Jenks does not disclose the use of a three-dimensional camera, but Inoue et al discloses a three dimensional device with a single image sensor comprising plurality of pixels (10) to detect images. To modify the teachings of Jenks with those of Inoue et al would have been obvious to one of ordinary skill in the art in order to improve the ability of the device by capturing images in an additional dimension.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee
Examiner
Art Unit 2878

PJL
January 20, 2006


Stephone B. Allen
Primary Examiner